

Notice of Allowability

Application No.

10/549,870

Examiner

Amy He

Applicant(s)

IWABUCHI ET AL.

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.
2. ☒ The allowed claim(s) is/are 1-11.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 9/21/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

1. Claims 1-11 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Claims 1-11 are allowable because none of the prior art teaches a voltage measurement device for dividing a plurality of voltage sources into a plurality of blocks and for measuring voltage of a block, the voltage measurement device comprising: a second group of switches including a first MOSFET of a second conductivity type, which has a second main electrode connected to one terminal of a first storage element and a first main electrode connected to a first voltage output terminal and which is turned ON/OFF in correspondence with a signal inputted to a control electrode, and a second MOSFET of the second conductivity type, which has a second main electrode connected to the other terminal of the first storage element and a first main electrode connected to a second voltage output terminal and which is turned ON/OFF in correspondence with a signal inputted to a control electrode; a third group of switches including a third MOSFET of the second conductivity type, which has a second main electrode connected to the control electrode of a first MOSFET of the first conductivity type and which is turned ON/OFF in correspondence with a signal inputted to a control electrode and a fourth MOSFET of the second conductivity type, which has a second main electrode connected to the control electrode of a second MOSFET of the first conductivity type and which is turned ON/OFF in correspondence with a signal inputted to a control electrode; and control means for turning on the first group of switches by turning on the third group of switches and for turning on the second group of switches

while the first group of switches is turned off by turning off the third group of switches, and in the combination as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Maki (U. S. Patent No. 6, 541, 980) discloses a multiplex voltage measurement apparatus for measuring the voltage of each of N serially connected voltage sources via voltage detection terminals coupled to a capacitor. A plurality of switches is used in the circuit.

Furukawa (U. S. Patent No. 6, 362, 626) discloses a cell voltage measuring device wherein component cells are divided into a plurality of cell blocks. A plurality of voltage detecting means including a plurality of switches is used for measuring the voltage.

Mukainakano (U. S. Patent No. 6, 407, 534) discloses a voltage detecting circuit including two groups of switches for detecting the level of the secondary battery voltage in comparison to a predetermined battery voltage.

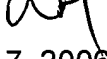
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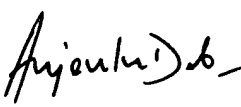
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (571) 272-2230.

The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diane Lee can be reached on 571-272-2399. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AH 
June 7, 2006.


ANJAN DEB
PRIMARY EXAMINER